



DEPARTMENT OF THE ARMY
HEADQUARTERS, 88TH REGIONAL READINESS COMMAND
506 ROEDER CIRCLE
FORT SNELLING, MINNESOTA 55111-4009

March 17, 2008

Deputy Chief of Staff Engineer

Mr. Paul Jayko
Ohio Environmental Protection Agency
Northwest District Office - DERR
347 N. Dunbridge Road
Bowling Green, OH 43402

RE: Submission of Proposed Plan for U.S. Army Reserve Local Training Area (LTA), Marion, Ohio,
Revision 0.0, March 2008

Dear Mr. Jayko:

On behalf of the US Army Environmental Command (USAEC) and the 88th Regional Readiness Command, please find enclosed two (2) copies of the Proposed Plan for the U.S. Army Reserve Local Training Area, Marion, Ohio, (USARC GFPR Contract #W911SO-04-F0017) Revision 0.0, March 2008.

The Proposed Plan is being issued for public comment, with a public notice being published in the Marion Star. One copy each of the public notice and a fact sheet on the Proposed Plan is being transmitted to each individual on the Marion LTA mailing list and owners of property adjacent to the Marion LTA. A copy of the public notice and fact sheet also are attached to this letter for your records and information.

As detailed in the attached public notice, the Army is conducting a public meeting regarding this Proposed Plan on Thursday, March 27, 2008, 6:30-8:30 p.m. at the Tri-Rivers Career Center, 2222 Marion-Mt. Gilead Rd., Marion, Ohio 43302. The Army trusts that Ohio EPA will be available to attend the public meeting. The anticipated public meeting date was announced at the 28 February 2008 Restoration Advisory Board meeting, which was attended by Ohio EPA.

Please contact Ms. Lisa Gulbranson of the 88th RRC at (612) 713-3752, or Mr. Rich Mendoza, USAEC at (309) 782-1871 with questions. Please provide your written comments or concurrence with this document directly to the KEMRON Project Manager, Ms. Mary Lou Rochotte. As indicated in past discussions, if the Agency has questions or requires clarification, the Army is open to discussing issues with the Agency during the public comment period. The public comment period will conclude on 16 April 2008. Thank you.

Sincerely,



DAVID MOORE
Chief, Environmental Division
88th Regional Readiness Command



RICHARD MENDOZA
Restoration Oversight Manager
Army Environmental Command-RIA

cc w/enclosure: Bonnie Buthker, Ohio EPA, Southwest District Office
Rich Mendoza, USAEC Environmental Restoration Manager
Heidi Novotny, USACE, COTR
Danny Walsh, USAEC Contractor Representative
Lisa Gulbranson, 88th RRC

cc w/public notice
and fact sheet: Darla Peelle, Ohio EPA, PIC, Central Office

cc w/o enclosure: Mary Lou Rochotte, KEMRON Project Manager
Tracy Bergquist, KEMRON GFPR Program Manager
Lou Ehrhard, KEMRON GFPR Deputy Program Manager

**USARC GFPR
No Action/No Further Action Proposed Plan
U.S. Army Reserve Local Training Area
Marion, Ohio
Contract # W911SO-04-F0017**

**Submitted to:
United States Army Environmental Command
1 Rock Island Arsenal
Bldg 90, 3rd Floor, Room 30A
Attn: IMAE-CDN (Mr. Richard Mendoza)
Rock Island, IL 61299**



**Contracted by:
US Army Contracting Agency
APG Directorate of Contracting
Building 4118, Susquehanna Avenue
Aberdeen Proving Ground, MD 21005**



**KEMRON Environmental Services, Inc.
1359-A Ellsworth Industrial Boulevard
Atlanta, GA 30318**

March 2008

TABLE OF CONTENTS

1.0	<i>Introduction.....</i>	<i>1</i>
2.0	<i>Site Background, Nature and Extent of Contamination, and Risks.....</i>	<i>3</i>
2.1	<i>Site Description.....</i>	<i>3</i>
2.2	<i>Site Investigation Background and History</i>	<i>3</i>
2.2.1	<i>Summary of Site Investigations</i>	<i>4</i>
2.2.2	<i>Previous Time Critical Removal Actions.....</i>	<i>6</i>
2.2.3	<i>Previous Non-Time Critical Removal Actions</i>	<i>7</i>
2.3	<i>Source, Nature, and Extent of Contamination.....</i>	<i>8</i>
2.4	<i>Summary of Risks</i>	<i>12</i>
2.4.1	<i>Summary of Risks: Non-Time-Critical Removal Action Areas</i>	<i>12</i>
2.4.2	<i>Summary of Residual Risks from Non-Removal Action Areas</i>	<i>14</i>
2.4.3	<i>Human Health Risk for Entire Marion LTA</i>	<i>15</i>
3.0	<i>Scope and Role of Response Action</i>	<i>16</i>
4.0	<i>Preferred Remedial Alternative Evaluation.....</i>	<i>17</i>
4.1	<i>Summary and Evaluation of Alternatives for Marion LTA.....</i>	<i>17</i>
4.2	<i>Detailed Analysis of Alternatives</i>	<i>17</i>
4.3	<i>Estimated Costs</i>	<i>20</i>
5.0	<i>Proposed Schedule</i>	<i>21</i>
6.0	<i>References</i>	<i>23</i>

List of Figures

Figure 1	Site Location Map
Figure 2	Marion LTA Site Map
Figure 3	Marion LTA NTCRA AREE's

List of Tables

Table 1	Marion Non-Time Critical Removal Action – Risk Based Removal Action Goals
Table 2	Hypothetical RmGs for Soils Based on the Reservist Exposure Scenario
Table 3	Summary of Residual Human Health Risks, Marion LTA (Excluding LTA-01, LTA-15 and LTA-16)

LIST OF ACRONYMS

ACM	Asbestos containing material
ALM	USEPA Adult Lead Methodology
AOC	Area of Concern
AM	Action Memorandum
AR	Administrative Record
ARARs	Applicable or Relevant and Appropriate Requirements
AREE	Area Requiring Environmental Evaluation
Army	Department of Army
BRA	Baseline Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Contaminant of Concern
COPC	Contaminant of Potential Concern
DOD	Department of Defense
EE/CA	Engineering Evaluation/Cost Analysis
EPA	Environmental Protection Agency
ERA	Ecological Risk Assessment
GFPR	Guaranteed Fixed Price Remediation
HHRA	Human Health Risk Assessment
KEMRON	KEMRON Environmental Services, Inc.
LTA	Local Training Area
MCL	Maximum Contaminant Level
MED	Marion Engineer Depot
mg/kg	Milligrams per kilogram
mg/L	Milligrams per Liter
MOE PSQGs	Ontario Ministry of Environment Provincial Sediment Quantity Guidelines
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NTCRA	Non-Time Critical Removal Action
Ohio EPA	Ohio Environmental Protection Agency
PA	Preliminary Assessment
PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated Biphenyls
PRG	Preliminary Remediation Goal
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RAB	Restoration Advisory Board
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RG	Remedial Goal
RmACR	Removal Action Completion Report
RmAWP	Removal Action Work Plan
RmG	Removal Action Goal
RRC	Regional Readiness Command
SAIC	Science Applications International Corporation
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act
SI	Site Investigation
SLERA	Scoping Level Ecological Risk Assessment
SSI	Supplemental Site Investigation

SVOC	Semi Volatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TCRA	Time Critical Removal Action
µg/L	Micrograms per liter
UCL	Upper Confidence Limit
USACE	United States Army Corps of Engineers
USAEC	United States Army Environmental Command
USAR	United States Army Reserve
VOC	Volatile Organic Compound

1.0 Introduction

This document presents the Proposed Plan for the US Army Reserve 88th Regional Readiness Command (RRC) Marion Local Training Area (LTA), 2565 Harding Highway East Marion County, Marion, Ohio. The purpose of this Proposed Plan is to inform and solicit public input on the preferred alternative for environmental site cleanup. To facilitate public input, the Proposed Plan reviews the site background and provides a description of the site characteristics, summarizes the remedial alternatives developed, and provides rationale for selection of the preferred alternative. Based on the findings of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) site investigations, removal actions completed to date, confirmatory sampling activities, ecological and human health risk assessment conducted at the Marion LTA, the Army is proposing that no further evaluation or action is necessary under CERCLA.

This Proposed Plan identifies No Action (NA)/No Further Action (NFA) as the preferred remedial alternative for the US Army Reserve Marion LTA. A Scoping Level Ecological Risk Assessment (SLERA) demonstrated that there is no unacceptable risk to the biological receptors at the Marion LTA. No action is required for those portions of the property where the Residual Human Health Risk Assessment demonstrated that there is no unacceptable risk to human health. No Further Action is necessary on the portions of the property in which CERCLA Removal Actions have been completed. During a 2007 CERCLA Non-Time Critical Removal Action (NTCRA), site-specific risk-based Removal Action Goals (RmGs) were established and documented to have been achieved such that no unacceptable risk remains in the NTCRA areas. The RmGs were developed to be protective of human health and with the understanding that, upon their attainment, the RmGs would be established as the Remedial Goals (RGs) for the property. Therefore, the RGs for the Marion LTA are equivalent to the RmGs of the NTCRA work areas previously established in the 2007 Action Memorandum.

This proposed plan was developed to fulfill the statutory requirements of Section 117(a) of CERCLA, the Superfund Amendments and Reauthorization Act (SARA) and Section 300.430(f) (2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CERCLA, as amended by SARA, provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. The NCP is the federal government's blueprint for responding to both oil spills and hazardous substance releases and controls cleanup at hazardous waste sites. The U.S. Army is the lead agency under CERCLA for the Marion LTA. The Department of Defense (DOD) has the authority to undertake CERCLA response and removal actions under 42 United States Code (U.S.C.) § 9604, 10 U.S.C. § 2705, and federal Executive Order 12580. CERCLA activities at the Marion LTA have been implemented as a federal-lead action with DOD, in conformance with all applicable U.S. Army and U.S. EPA CERCLA and Defense Environmental Restoration Program (DERP) requirements and guidance. This Proposed Plan also is intended to inform the public of the Army's planned final remedy at the Marion LTA. The Army is seeking public input on the preferred alternative as described in this document. The public is provided a 30-day period to submit comments on this Proposed Plan.

Remaining sections within this Proposed Plan summarize site background, characteristics, and potential risks (Section 2.0), the scope and role of the Proposed Response Action (Section 3.0), a description of the proposed remedial alternative with assessment of the alternative's capability of achieving remedial action objectives (RAOs) (Section 4.0), proposed schedule for implementation (Section 5.0), and other information relative to public involvement and information sources.

The purpose of this document is to present the US Army's Proposed Plan for implementation of remaining actions necessary to complete the environmental cleanup of the Marion LTA site. Previous CERCLA response actions at the site include execution of a Time Critical Removal Action (1999) to

address drums identified at the site and a Non-Time-Critical Removal Action at three Areas Requiring Environmental Evaluation (AREEs), identified as LTA-01, LTA-15 and LTA-16 (2007). This Proposed Plan incorporates by reference multiple reports on the execution of the CERCLA process at the US Army Reserve 88th RRC Marion LTA. These documents include but are not necessarily limited to:

- Final Supplemental Site Investigation Report (SSI), Revision 3.0, 17 May 2006 (KEMRON 2006);
- Final Engineering Evaluation/Cost Analysis (EE/CA), Revision 2.0, 19 March 2007 (KEMRON 2007);
- Final Action Memorandum, Revision 2.0, 13 June 2007 (KEMRON 2007);
- Final Removal Action Work Plan (RmAWP), Revision 2.0, 12 July 2007 (KEMRON 2007);
- Final Removal Action Completion Report (RmACR), Revision 2.0, February 2008 (KEMRON 2008);
- Final Scoping Level I Ecological Risk Assessment (ERA), Revision 1.0, November 2006 (KEMRON 2006); and
- Final Residual Human Health Risk Assessment, Revision 2.0, February 2008 (KEMRON 2008).

All of the CERCLA project documents were submitted to the Ohio Environmental Protection Agency (Ohio EPA) for its review and comment. Ohio EPA also provided oversight of site field work, and all sampling and analyses conducted throughout the CERCLA process conformed to Ohio EPA reviewed and approved plans. All of the Marion LTA CERCLA documents for the Marion LTA have been made available for public review in the project Information Repository at the Marion Public Library. The documents also are retained in the project CERCLA Administrative Record (AR) file, and are available by contacting the U.S. Army Environmental Restoration Manager, Mr. Richard Mendoza. Mr. Mendoza's contact information is provided in Section 5.0 of this Proposed Plan.

2.0 Site Background, Nature and Extent of Contamination, and Risks

2.1 Site Description

The Marion Local Training Area (LTA) property, located at 2565 Harding Highway East in Marion, Ohio (Figure 1), consists of the southern 127.1 acres of the former Marion Engineer Depot (MED) facility.

The MED facility originally consisted of 653.2 acres of agricultural farmland acquired by the United States War Department between 1942 and 1947. The LTA property is located 52 miles north of Columbus, OH and three miles east of the City of Marion, OH between U.S. Route 23, 30, State Route 98, and Rural Route 176 (Patton Pike) in Claridon Township, Marion County, at 2565 Harding Highway East. The LTA property is covered by the Marion East Quadrangle of the USGS Survey 7.5 series topographic maps (Figure 1). The LTA property is owned and operated by the United States Army Reserve (USAR) 88th Regional Readiness Command (RRC) as a local training facility.

The original mission of the MED property was to serve as a reserve depot for engineering supplies and equipment and to repair heavy engineering equipment. The current LTA property also included a pistol firing range that was removed sometime in the early 1960s.

The entire MED was placed in inactive status in 1961. The Marion LTA property was officially transferred to the U.S. Army Reserve on July 1, 1962. Since that time, the U.S. Army Reserve property had been used for intermittent outdoor training facility for the Army Reserve and Ohio National Guard until it was closed in November 1998. The 88th Regional Support Command (later renamed the 88th Regional Readiness Command) acquired the property in March 1996.

2.2 Site Investigation Background and History

The Army environmental restoration program for the Marion LTA site is designed to provide assessment and remediation, where required, of impacted environmental media on the site. Several environmental investigations have been conducted on and in the vicinity of the site in conformance with the CERCLA process and associated requirements. Investigations conducted on the Marion LTA property focused primarily on surface indications, possible disposal areas and subsurface anomalies identified during geophysical studies. Past site CERCLA actions are summarized in chronological order in the Final Action Memorandum, and are detailed in separate reports available in the administrative record for the Marion LTA.

There is no specific historical documentation describing the disposal of hazardous materials or waste at MED, however, past site assessments and investigations have indicated that hazardous materials were handled and/or disposed of at MED. Based on the presence of these materials at MED and the historic use of the entire Marion parcel, site investigations (SI) at the Marion LTA parcel assumed that a variety of hazardous materials may also have been handled/disposed of at the LTA portion of the property in the past. Previously prepared site assessment and investigation reports have indicated that hazardous materials that may have been handled at the property include: solvents, thinners, fuel and lubricants, waste lubrication oil and fuel, waste sandblast media, waste paint material, and steam cleaning residue. The site investigations for the Marion LTA parcel, including the Supplemental Site Investigation (SSI) KEMRON 2006), have included sampling and laboratory analyses to determine the presence or absence of contaminants based on the potential for historic use of this wide suite of hazardous materials. Laboratory analytical results of soil and waste from the 2007 NTCRA had consistent contaminants with those identified in the CERCLA SI sampling and analytical results.

2.2.1 Summary of Site Investigations

Several environmental investigations have been conducted on and in the vicinity of the Marion LTA site. These investigations are summarized here in chronological order, and are detailed in documents available in the Information Repository.

An environmental assessment of the entire former MED facility including the LTA property was completed by ERM-Midwest in 1990. Analytical results were located and reported by SAIC in a preliminary assessment (PA) report dated 2000.

An environmental baseline survey was completed by JAYCOR Environmental in August 1996. The environmental baseline survey was performed with the purpose of describing historical site operations and identifying areas of environmental concern on the Marion LTA property. The survey identified several areas of concern, including several drums (central and northeast portions of the site), a potential wetland area (northeast), potential asbestos materials (solid waste area), potential polychlorinated biphenyls (PCB) containing materials (old rail line), large quantities of construction and domestic debris, and railroad pilings. No environmental sampling was conducted during this survey. The survey report concluded that no serious threats were identified requiring immediate attention but that the above areas of concern should be further investigated and resolved.

A relative risk site evaluation was completed by Montgomery Watson Harza in November 1998. This screening level investigation was focused in two areas on the LTA property, identified as the “Dump Area” and the “Disposal Area”. The Dump Area was located in an eastern portion of the LTA property (near what is currently identified as LTA-15), and the Disposal Area was located in the extreme southwestern corner of the LTA property (near what is currently identified as LTA-1). This investigation included the collection of a limited number of surface and/or shallow subsurface soil samples within these target areas with analysis of these samples for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), metals, and PCB. The report did not present a tabulated list of Contaminants of Concern (COC); however, it did append the analytical results for the collected soil samples. The analytical data indicated the detection of various VOC, PCB, and metals constituents within the Dump Area in both surface and subsurface samples. VOC (tetrachloroethene), polycyclic aromatic hydrocarbon (PAH), and metals constituents were also detected within surface samples collected from the Disposal Area. The report recommended further investigation within the Dump Area (or in the vicinity of LTA-15).

Cultural and natural resource surveys were conducted in 1998 and 2005 to identify potential cultural or natural resource areas within the LTA property area. The results of these surveys found no threatened or endangered species/habitats on the property but did identify the presence of wetlands on the property. Survey information also indicated that the LTA property was not considered eligible for National Register of Historic Places status.

A drum sampling and surface soil sampling investigation was completed by Jones Technologies Inc. in 1998. Drum locations were investigated within LTA-1 and LTA-15 areas on the LTA property. Drum conditions were indicated to be generally rusted and deteriorated, and found resting on their sides. Analytical results for composite samples indicated the presence of contaminants in selected drums and soil sampling locations and recommended immediate removal of the drums. As a result, a time critical drum removal action was performed in March 1999 by Montgomery Watson Harza.

A biological and water quality study was conducted by the Ohio EPA in 1998 for streams in the Marion area. Several sediment samples were collected within the Marion LTA surface water drainage system. Sample results indicated the presence of PAHs, copper, and zinc in sediment in Riffle Creek south of the

site. Sample results from the Clendenon Ditch sample did not indicate any negative impact from an upstream source (SAIC, 2000a).

The Marion County Health Department analyzed drinking water samples from several nearby residences' private drinking water wells in March 1999. Chloroform and total beta were detected in one sample with no other notable detections. Based on site-specific data gathered through the CERCLA assessments and investigations of the Marion LTA parcel, chloroform and total beta were not detected above screening levels in representative site samples and thus were determined not to be contaminants of potential concern for the Marion LTA. Therefore, the detections in the private drinking water wells are not associated with Marion LTA contaminants. Further, geologic data presented in the CERCLA SI documents note that Ohio Department of Natural Resources well records indicate that most wells in the area are completed in the limestone bedrock aquifer, and shallow sand or gravel zones in the glacial material overlying the bedrock aquifer generally do not produce large amounts of water (SAIC, 2000; KEMRON, 2006).

No public water supply system wells, drinking water wells or potable water sources for human use are located on the LTA property.

A Preliminary Assessment (PA) of environmental conditions was initiated on the LTA property by SAIC in September 1999. The PA Report (SAIC, 2000) identified a total of 51 Areas Requiring Environmental Evaluation (AREE).

A Phase I Site Investigation (SI) was subsequently undertaken by SAIC in 2000 with the primary focus being the collection and analysis of surface/subsurface soil, sediment, and water samples from the various LTA AREEs. Additional phases of investigation were completed by SAIC in May 2002 (Phase II), March 2003 (Phase III), and August 2003 (Phase IV) in order to further characterize site environmental conditions.

Analytical data for soil samples collected during the SI were compared to USEPA Region 9 PRGs for purposes of data screening. The results indicated the presence of inorganic compounds (lead at LTA-15 and LTA-16, and iron at LTA-16) and organic compounds (dioxins/furans at LTA-01 Arochlor-1260 and vinyl chloride at LTA-15, trichloroethene at LTA-11 and LTA-15, and PAHs at several AREEs) which exceeded the available screening values. The SI concluded that arsenic exceeded PRGs in numerous soil samples. The exceedances were considered to be indicative of high natural background concentrations for this compound. Analysis of sediment samples also indicated the presence of numerous inorganic compounds including arsenic, chromium, copper, magnesium, nickel, and zinc in nearly every sediment sample collected, and organic compounds (Arochlor-1260 at LTA-OD1 and LTA-OD2, and PAHs at all sediment AREEs except LTA-OD4 which exceeded available screening standards (Ontario MOE PSQGs). Groundwater samples collected from four (4) temporary well points installed during the 2002 Phase II indicated zinc exceeded the current PRG screening value in each sample and trichloroethene in one sample collected within the LTA-15 AREE. Groundwater samples from local residential wells indicated no PRG screening values or MCLs were exceeded.

A geophysical investigation was completed by SAIC in 2001 as part of the SI with the purpose of confirming/denying the presence of buried debris or former excavations within several AREEs identified by SAIC during the previously completed preliminary assessment. Electromagnetic and ground-penetrating radar surveys were completed during this investigation. The survey results were intended to guide further investigation efforts during subsequent completion of SAIC site investigation efforts beginning in 2002. The investigation results indicated "no obvious subsurface anomalies" in 13 of 17 identified AREEs with recommendations for subsequent standard subsurface soil sampling methods at these locations. The remaining four (4) AREEs were flagged as containing "possible subsurface anomaly" with a recommendation for confirmatory test pit completions.

A screening level human health risk assessment was performed by MWH Americas, Inc. in 2003. The purpose of this screening level risk assessment was to determine whether a baseline human health risk assessment was necessary for this property based on review and identification of Contaminants of Potential Concern (COPCs) on the property. The report utilized environmental data from SAIC activities performed during SAIC's initial site inspection activities through 2002 and compared the data to USEPA Region 9 PRGs for conservative categories such as residential soil and tap water criteria, for purposes of data screening. The report indicated 31 COPCs in the surface soil category, 37 COPCs in the subsurface soil category, nine (9) COPCs in the sediment category, one (1) COPC in surface water, and 15 COPCs in groundwater (taken from temporary groundwater sampling points). For the surface soil and subsurface soil categories, the maximum observed COPC concentrations were noted within LTA-01, LTA-15, and LTA-16. The majority of COPCs in soil consisted of metals constituents with additional PAH, VOC, PCB and dioxin constituents also indicated. COPCs in sediments were indicated to consist primarily of metals and PAH.

Only arsenic was indicated as a COPC in surface water. Metals, VOC, and PCB were indicated as COPCs in groundwater. The report recommended that a baseline risk assessment (BRA) be conducted for the property in order to estimate carcinogenic and noncarcinogenic human health risk at this site.

Based on the data collected during the previous site investigation activities, five areas were identified as requiring possible further investigation. The five identified areas of concern were LTA-01 LTA-11, LTA-15, LTA-16, and LTA-25.

Site investigation activities completed by KEMRON in 2005-2006 under contract to the USAEC included the completion of numerous test pits within each of the five identified areas of concern with analysis of representative soil samples to provide complete horizontal and vertical delineation of soil conditions within each area of concern. Groundwater quality was also characterized through installation and sampling of groundwater from six wells. Sediment samples were also characterized at ten locations on site. As a result of the sediment data evaluation, the Army concluded that the Marion LTA site activities have not impacted sediments and no response action is required under CERCLA for sediments. Ohio EPA concurred with this finding. Additional details regarding the results of the Supplemental Site Investigation program are reported in the Marion LTA Supplemental Site Investigation Report, Revision 3.0, May 2006 (KEMRON).

A Level 1 Scoping Ecological Risk Assessment (ERA) was conducted by KEMRON in 2006 (KEMRON 2006). Through the Level 1 ERA, the Army concluded that no important ecological resources at the site have been impacted, excluding the isolated Wetland W3 located within LTA-16. This wetland was addressed by the NTCRA performed at LTA-16. Therefore, the Army determined that a Level II ERA was not required.

2.2.2 Previous Time Critical Removal Actions

A time critical drum removal action was completed by Montgomery Watson Harza in 1999. A total of 50 drums were removed from three areas on the LTA property; LTA-01 LTA-14, and LTA-15/16. Additional drum characterization and soil samples were completed during this investigation. Two drums sampled from an eastern location indicated Toxicity Characteristic Leaching Procedure (TCLP) lead concentrations greater than 5.0 milligrams per Liter (mg/L) and the contents of one drum were determined to have a flash point below 80°F. Four drum samples obtained from a western location indicated TCLP chromium concentrations in excess of the regulatory standard of 5.0 mg/L. Associated soil samples indicated detectable concentrations of metals, SVOCs, PCBs, and VOC. The drums were removed from the LTA property.

During 2005 site investigation activities by KEMRON, a single drum containing VOC-contaminated waste material along with several other small containers was also discovered in LTA-15 within a single test pit location. The drum and other containers were subsequently removed, containerized (overpacked) and transported off-site for disposal.

2.2.3 Previous Non-Time Critical Removal Actions

Work on a NTCRA at LTA-01, LTA-15 and LTA-16 was initiated by KEMRON in July 2007 in accordance with the Final Action Memorandum, dated 13 June 2007 (KEMRON 2007), and the Final Removal Action Work Plan (RmAWP), Revision 2.0, dated 12 July 2007 (KEMRON 2007). The Action Memorandum outlined the removal of surface and subsurface soils that contain contaminants of concern (COC) at levels exceeding the Removal Action Goals (RmGs) for site-specific COCs as identified in the Action Memorandum. The Final RmAWP (KEMRON 2007) detailed the procedures that were followed in conducting the removal of contaminated soils and associated COC source material from the defined AREEs.

Site Investigation (SI) activities completed at the Marion LTA provided environmental data and observations that assorted debris, waste materials and associated contaminated soils were present on the property in LTA-01, LTA-15 and LTA-16. An Engineering Evaluation and Cost Analysis (EE/CA) was conducted, resulting in a recommendation for a NTCRA at these three work areas. The EE/CA (KEMRON, 2006) was made available to the public, with a public notice published in the local newspaper, announcement to the Restoration Advisory Board (RAB) and the Ohio EPA, and a public comment period was conducted. Subsequent to receipt of the public comments, the Army evaluated public comment and prepared an Action Memorandum, including a Responsiveness Summary for all comments provided by the public on the EE/CA. The Action Memorandum was signed by the Army on 25 June 2007, documenting the Army's determination that a NTCRA, including excavation and off-site disposal, was appropriate under CERCLA for the three AREEs within the Marion LTA. The Final Action Memorandum and RmAWP both addressed specifics of the removal actions within LTA-01, LTA-15 and LTA-16. The Army conducted a public availability session on 25 June 2007 to provide the public additional opportunity to ask questions of the Army and its contractor prior to implementation of the NTCRA.

The completed NTCRA addressed removal of contaminated soils and associated COC source material at LTA-01, LTA-15 and LTA-16. Non-friable asbestos (e.g., transite) was also identified on the surface at LTA-01 and LTA-15. LTA-15 was determined to have a limited area containing soils with concentrations of volatile organic compounds (VOCs) that were collocated with elevated metals levels. As described in the Final EE/CA, the potential risks to human health in the three AREEs were based on the elevated presence of arsenic, lead and benzo(a)pyrene. VOCs detected in the subsurface at LTA-15 were not the COCs that caused an unacceptable risk under CERCLA for the potential future human populations at the site, and thus VOCs were not included in the RmGs for the site. Additional details regarding the streamlined human health risk assessment for the NTCRA were included in the EE/CA (KEMRON, 2006).

As documented in the EE/CA and Action Memorandum, detected contaminants in the three AREEs were determined to pose a potential risk to human health. The NTCRA was designed to remove the COC source materials and associated contaminated soil located at and near the surface at LTA-01, LTA-15 and LTA-16, such that remaining COC concentrations would not exceed the human health based RmGs for lead, arsenic and benzo(a)pyrene.

As discussed in the EE/CA and Action Memorandum, this NTCRA was anticipated to mitigate unacceptable risks posed by the COCs in the identified pathways for potential future populations, with no further action anticipated at these sites. Issuance of the RmACR confirmed that no COCs remained above the RmGs and no asbestos fibers were detected in site confirmatory soil samples. Based upon the achievement of the RmGs in all three removal action areas, the Army concluded that the NTCRA objectives had been achieved and that No Further Action was necessary. As discussed in Section 1.0 of this Proposed Plan, the RmGs were established with the intent of their achievement being the final action at the site. The RmGs were calculated and established with the intent that upon their achievement, they would be adopted as the Remedial Goals for purposes of achieving closure under CERCLA.

2.3 Source, Nature, and Extent of Contamination

Site investigation activities completed previous to 2005 (namely the Preliminary Assessment (PA) and subsequent SI geophysical investigation) identified a total of 51 areas requiring environmental evaluation (AREEs). The identified AREEs were investigated in further detail during four phases of investigation completed between November 2000 and August 2003. The majority of intrusive site investigation activities were conducted between 2000 and 2003 and included sampling and analysis of a large number of soil samples and a small number of sediment samples.

Analytical constituents were identified as COPCs when initial analytical data from surface, subsurface and sediment samples revealed concentrations in excess of applicable screening values from USEPA, Region 9 preliminary remediation goals (PRGs). Contaminants of Potential Concern (COPCs) were identified as VOCs, SVOCs (including PAHs), metals and PCBs.

Based on the data collected during the 2000 through 2003 site investigation activities, five areas were identified as requiring possible further investigation. The five (5) identified areas of concern were LTA-01, LTA-11, LTA-15, LTA-16, and LTA-25.

Investigation activities completed by KEMRON in 2005-2006 included the completion of numerous test pits within each of the 5 identified areas of concern with analysis of soil samples to provide final horizontal and vertical delineation of soil conditions. Groundwater quality was also characterized through installation and sampling of groundwater from six wells distributed through four (4) of the 5 identified AREEs. Sediment samples were also characterized at ten locations on site.

All sampling and analysis activities conducted in the various Site Investigation phases were performed in accordance with Ohio EPA-approved plans. Laboratory analyses were conducted in accordance with Ohio EPA-approved Quality Assurance Project Plans. Analytical methods and analytes were selected to evaluate samples for a variety of contaminants based on historic use of the larger Marion Engineering Depot (MED), of which the Marion LTA was once a part, and Marion LTA history (acquired through the Preliminary Assessment) and observations in the field.

Site waste materials and associated contaminated soils that contain metals in excess of the screening Region 9 industrial PRGs had been observed and confirmed through laboratory analytical testing in LTA-01, LTA-15, and LTA-16. The waste materials generally consist of structural demolition debris such as tar/asphalt-based roofing wastes, wood, concrete block, brick, metal debris including nails/spikes, rail ties, discarded appliances, and tires. In some areas such as LTA-01 and LTA-16, waste materials were present as shallow deposits with minimal surface expression. In LTA-15, both shallow buried and surface deposits were apparent. LTA-15 was determined to have an area containing soils with concentrations of volatile organic compounds (VOCs) above Region 9 industrial PRGs. VOC-impacted soils were considered to be a result of waste paint materials within LTA-15. Non-friable asbestos-containing materials (ACM) were also identified at the ground surface in LTA-01 and LTA-15, and in LTA-15 debris piles.

The 2005-2006 sampling, taken together with the previous site assessment and SI activities, has been determined to complete the definition of the nature and extent of contamination at the Site. Additional detailed information regarding the definition of the nature and extent of contamination is available in the Supplemental Site Investigation Report (KEMRON 2006).

KEMRON installed six permanent groundwater monitoring wells in four separate investigation areas (LTA-01, LTA-11, LTA-15 and LTA-16) during 2005 Supplemental Site Investigation (Supplemental SI) field activities. The results of groundwater monitoring in these wells was documented in the Final Supplemental Site Investigation Report (KEMRON, 2006). The Supplemental SI Report concluded that no impact to groundwater from historic site use exists. As an additional precaution, Ohio EPA commented that the NTCRA should include post-removal groundwater sampling in the three work areas to demonstrate that the field actions did not mobilize contaminants to groundwater in the LTA-01, LTA-15 and LTA-16 monitoring wells. In response to the Agency's comments, the Army included post-removal action groundwater monitoring in these wells for total and dissolved metals. The groundwater monitoring activities and results were described in the Final Removal Action Work Plan (KEMRON, 2007). The laboratory analytical results confirmed that groundwater has not been impacted by the Marion LTA site activities, and therefore is not subject to a response action under CERCLA.

The Army reviewed the past site environmental data in planning the NTCRA for LTA-01, LTA-15 and LTA-16. Based on environmental information and data from historic CERCLA activities completed at the site through 2006, the Army determined that the NTCRA would include laboratory analysis of the concentrations of the following analytes in soil confirmatory samples collected in each NTCRA work area:

LTA-01: Semi-volatile Organics, Metals and Asbestos Fibers;

LTA-15: Volatile Organics, Semi-Volatile Organics, Metals and Asbestos Fibers; and,

LTA-16: Semi-volatile Organics and Metals.

All sampling and analysis activities conducted during the NTCRA were performed in accordance with Ohio EPA-approved plans, including the Quality Assurance Project Plan (KEMRON, 2007), Final Removal Action Work Plan (KEMRON, 2007) and Sampling and Analysis Plan (KEMRON, 2005). By removing all soil with COC concentrations above RmGs and the related contaminant source materials, no further action was anticipated to be necessary to address soil contamination and associated pathways at the removal action areas.

The Action Memorandum described AREE LTA-01, located on the southwestern portion of the Marion LTA (see Figure 2), as having been impacted by apparent fill material and shallow subsurface soils containing various contaminants including metals, PAHs and nonfriable asbestos. Subsequent to clearing of vegetation from the site, minimal non-friable asbestos was identifiable. No potentially asbestos containing materials (ACM) were identified in the subsurface during excavation, and only small, localized chips of nonfriable ACM were observed on the surface prior to excavation. LTA-15 and LTA-16 were located in the northern third of the parcel adjacent to one another, as shown on Figure 2. LTA-15 was characterized by readily identifiable surface debris. Laboratory analyses of surface and shallow subsurface soils at LTA-15 during SI activities exhibited elevated metals and, in a limited area, volatile organic compounds (VOCs). Buried containers were encountered in this area during the 2005 SI field work. LTA-16 was located within an isolated 0.47 acre Category 2 wetland, designated as wetland W3 in recent studies conducted on behalf of the 88th RRC by others (BHE, 2006). Interviews conducted through the Preliminary Investigation and Site Investigation (PA/SI) phases of the CERCLA process for the Marion LTA indicated that LTA-16 was historically used as a burn area. LTA-16 exhibited elevated metals and PAHs in the surface and shallow subsurface soils.

Subsequent to the engineering evaluation and cost analysis (EE/CA), conduct of the associated public comment period, and Army evaluation of public comments, the recommended alternative for LTA-01, LTA-15 and LTA-16 was selected in the Final Action Memorandum (KEMRON 2007). The NTCRA was specified to include excavation of the contaminated surface and shallow subsurface soil and surface and near surface waste source materials in each of the areas that exhibited exceedences of RmGs. Excavating wastes and soil containing elevated levels of COCs was determined as the appropriate means to mitigate the potential public health threat posed by the surface and shallow subsurface soil at the sites under industrial/commercial use scenario. The selected action included disposal of excavated soil and waste in an appropriately permitted off-site landfill. As also noted in the Final Action Memorandum, following excavation and off-site disposal of contaminated soil and source materials, the resulting excavations would be graded and backfilled as necessary with clean fill to establish acceptable drainage to allow use of the property for the Reservists' training activities. The wetland (W3) at LTA-16 would be restored to approximate pre-excavation grade, planted per the wetland mitigation plan approved by Ohio EPA, and allowed to recover naturally. The removal action areas would be appropriately seeded. Contaminated soil and source material excavation and off-site disposal was determined to meet all CERCLA evaluation criteria, and was the selected alternative for the three areas. The site specific removal action goals were established for the COCs through a streamlined risk assessment presented in the EE/CA. The COCs included benzo[a]pyrene, arsenic, and lead (see Table 1).

Table 1 shows allowable maximum soil concentrations of COCs (in mg/kg) that could result in cumulative target risk levels of 1×10^{-4} using exposure scenarios evaluated in the risk assessment. RmGs are based on an exposure duration of 250 days/year to represent the industrial/commercial worker exposure as outlined in the HHRA Work Plan (KEMRON 2007). This exposure does not currently exist at the site and is not an expected exposure scenario for future land use. Designated future land use is for reservist training. For lead, the RmG was calculated using the Adult Lead Methodology (ALM) (USEPA, 1996 and 2003). All goals were developed according to USEPA guidance.

By removing all soils and source materials containing COCs with concentrations above the RmGs, no further action was anticipated to be necessary in the future to address soil contamination and associated pathways at the remedial action areas.

**Table 1
Marion Non-Time Critical Removal Action – Risk Based Removal Action Goals**

Contaminant of Concern (COC)	Removal Action Goals (RmG) (mg/kg)
Arsenic	95
Benzo(a)pyrene	19.6
Lead *	1083

* - (USEPA, 1996 and 2003) Adult Lead Methodology (ALM) used to determine RmG.

2.4 Summary of Risks

During site investigation and cleanup activities, potential risks associated with this site were evaluated for human health and ecological receptors in accordance with U.S. EPA Guidelines. One isolated wetland designated as W-3 was found within the perimeter of LTA-16. As documented in the RmACR, wetland W-3 was restored and replanted in conformance with Ohio EPA oversight to allow natural recovery following removal of COCs from LTA-16. The Final Level I Scoping Ecological Risk Assessment (KEMRON 2006) concluded that no further ecological assessment was required at the Marion LTA based upon the absence of potential for impacts to important ecological resources. Evaluation of Human Health risks are discussed below.

The future intended use of the Marion LTA property has been thoroughly evaluated by the Department of Defense (DOD). The 88th RRC and USAEC determined that future residential use was not applicable to the property, but rather like use was applicable. The site is intended to continue to be used for US Army Reservist training. Access to the facility is restricted by fencing and locked gates. When any intrusive action is proposed, such as periodic mowing or fence maintenance, the activities are coordinated through the US Army Reserve 88th RRC, Fort Snelling, Minnesota.

2.4.1 Summary of Risks: Non-Time-Critical Removal Action Areas

The Marion LTA EE/CA (2006) presented the streamlined human health risk evaluation related to the portions of the site examined for the NTCRA. As the Army documented in the EE/CA, Action Memorandum and RmAWP, a human health risk-based goal that achieves the CERCLA standard of 1×10^{-4} (also denoted as $1 \text{E-}4$) for carcinogenic compounds was used in establishing the RmGs for the removal areas. Non-carcinogenic compounds are evaluated to ensure a Hazard Index (HI) of 1 is not exceeded. In its comments on the EE/CA, Action Memorandum and RmAWP, Ohio EPA noted that its Technical Decision Compendium regarding human health risk (2004) establishes a goal of 1×10^{-5} as the acceptable end point for environmental cleanup activities. In its 26 June 2007 letter to the Army regarding the Draft Final RmAWP, comment 1.b, Ohio EPA noted that since the designated future use of the Marion LTA is Reservist training, the Army should address achievement of a 1×10^{-5} human health risk-based cleanup of the site. Although not required to do so under CERCLA, the Army evaluated the data from the NTCRA in the RmACR and concluded that the Ohio EPA Technical Decision Compendium goal of 1×10^{-5} is achieved by the RmGs under the Reservist exposure scenario. Additional details are provided in the Final RmACR (KEMRON, 2008) and are summarized below.

The Reservist exposure scenario (as defined in the Marion LTA Final HHRA Work Plan, KEMRON, 2007) includes Reservist exposure duration of six years at a frequency of six days per year, eight hours a day. Implementing the same calculation methodologies of the Final HHRA Work Plan, the following RmGs (Table 2) would be derived for the protection of a Reservist exposure.

Table 2
Hypothetical RmGs for Soils Based on the Reservist Exposure Scenario

<u>Reservist Exposure</u> Reservist 10-5 RmGs	
Contaminant of Concern (COC)	RmG as concentration in soil (mg/kg)
Arsenic	1656
Benzo(a)pyrene	340

The lead risk goal is a blood lead level not to exceed 10 ug/dl per the USEPA Adult Lead Model (ALM) and USEPA risk assessment guidance. The 14,233 mg/kg RmG for lead in soil is protective of a Reservist exposure, as defined in the HHRA workplan, based on an acceptable blood lead level not to exceed 10 ug/dl.

All of the Reservist 1×10^{-5} RmGs were well above the RmGs developed and applied by the Army in the NTCRA based on the industrial/commercial 1×10^{-4} exposure scenario. Soil confirmatory sample concentrations within the three NTCRA work areas did not approach or exceed the Reservist 1×10^{-5} RmGs. Therefore, the Army has demonstrated that the three NTCRA work areas on the property meet the Ohio EPA human health risk based goals protective of the potential exposures based on the future use of the site as a Reservist training facility.

Representative samples collected and analyzed through the CERCLA SI process within the NTCRA work areas demonstrate that the concentrations of these COCs were below the above Reservist 1×10^{-5} risk goals in the vast majority of samples. The data thus illustrate that the Army's RmGs, which serve as the final RGs, were very conservative for the site designated use as a Reservist training area. The site-specific data further confirm that potential exposure of Reservists to the COCs during training activities was extremely limited and that the site has been and currently is safe for Reservist training.

It is noted that a minimum of six (6) inches of cover soil was placed in all removal action areas. Within LTA-01, clean backfill was placed in thicknesses of 6 inches up to over eighteen (18) inches. Within LTA-16, backfill was placed to return the area to the approximate pre-excavation elevation, consistent with the wetland mitigation goals. Therefore, backfill was placed in the LTA-16 removal action area in thicknesses of up to two (2) feet. Within LTA-15, backfill thicknesses were up to four (4) feet or more. As a result, consistent with EPA risk exposure guidance, the soil exposure pathway for any receptor within each removal action area is now considered incomplete. Further evaluation of the achievement of Ohio EPA risk goals was conducted to assess the potential human health risk posed by the removal action work areas based upon potential future industrial/commercial use. While the Army has clearly established the future use of the parcel as a Reservist training facility, Ohio EPA's 18 June 2007 comments on the Draft Final Removal Action Work Plan indicated that evaluation to the industrial/commercial standard would also be acceptable.

Table 6 of the Final RmACR (KEMRON, 2008) presented a summary of risk estimates using the 95% UCL of the mean for each compound driving risk in each work area (LTA-01, LTA-15, and LTA-16). An industrial/commercial worker and a Reservist exposure were evaluated using the exposure assumptions defined in the Marion LTA Final HHRA Work Plan (KEMRON, 2007). No risk estimate exceeded the Ohio EPA Technical Decision Compendium goal of 1×10^{-5} , a Hazard Index of 1 or a blood lead level of 10 $\mu\text{g}/\text{dl}$. As a result, the Army has demonstrated that the three NTCRA work areas meet the Ohio EPA human health risk based goals for both future use as a Reservist training facility and potential future industrial/commercial use.

As further confirmation that RGs have been achieved, groundwater samples were taken in the Removal Action Areas as described in the RmAWP. No MCLs were exceeded in the post-removal action samples. The detected concentrations of dissolved metals were very similar to pre-removal action concentrations, with many detected concentrations lower in the 2007 analytical results than in the 2006 results. In each sample, the COCs lead and arsenic were lower than the 2006 results. The Ohio EPA had requested that post-removal action groundwater sampling should be conducted to verify that COCs were not mobilized during the NTCRA field activities. Per the RmAWP, both dissolved and total metals were sampled. Based on the highly turbid nature of the aquifer, dissolved metals were used for comparison to MCLs. As described in Table 5 of the RmACR, no MCL exceedances were observed when evaluating the dissolved metals concentrations. Further, analytical results indicated that the detected dissolved metals concentrations were similar to the detected levels prior to conduct of the NTCRA.

The post-removal action groundwater data indicate that no adverse impact to the monitored aquifer occurred as a result of the removal action. The Supplemental SI Report concluded that groundwater quality has not been impacted by historic site activities. The 2007 data were consistent with the 2006 groundwater data. Based on the results of the October 2007 post-removal groundwater monitoring event, no further groundwater monitoring is necessary and no response action under CERCLA is necessary for site groundwater.

2.4.2 Summary of Residual Risks from Non-Removal Action Areas

Risk assessment was conducted for the US Army Reserve Marion Local Training Area in Marion, Ohio to assess the potential for risk associated with the residual contamination in site soils following completion of the NTCRA as described in Section 2.4.1.

For the remainder of the Marion LTA, a residual human health risk assessment was conducted per the Final HHRA Work Plan (KEMRON, 2007) to assess potential human health risks posed outside of the NTCRA work areas (e.g., outside of LTA-01, LTA-15 and LTA-16). The HHRA Work Plan presented the populations that were to be evaluated in the HHRA. Those populations were determined in conformance with USEPA risk assessment guidance.

As is detailed in the Final HHRA (KEMRON, 2008), residual soil contamination was evaluated from the ground surface to approximately 12 feet below grade, consistent with the Final HHRA Work Plan. Soils were analyzed in some cases to a depth of 30 feet below grade. Impacts to site soils above screening levels dropped significantly in the sub-surface soils as evidenced by the four inorganic compounds as the only COCs in the 4-12 foot depth soils. Exposure to soils below 12 feet subsurface is also not anticipated at the site.

The site dataset was divided into three Exposure Units and hazard/risk estimates were developed for each Exposure Unit. Four hypothetical exposure scenarios were developed for this property: a hypothetical on-site industrial/commercial worker, a potential future construction worker, a Reservist and a potential adolescent trespasser exposed to soils. These scenarios were developed assuming that all exposures

would include direct contact with residual contamination and provide a very conservative estimate of the actual risk since they assume an exposure duration that most likely will never or rarely exist.

The highest residual risks associated with the hypothetical exposure scenarios quantified for the three exposure units are summarized in Table 3 below. The NTCRA work areas, LTA-01, LTA-15 and LTA-16 are excluded in the table based on the separate evaluation of risk posed by these areas as documented in the Marion LTA Final RmACR and as described in Section 2.4.1 of this Proposed Plan.

Table 3
Summary of Residual Human Health Risks, Marion LTA
(Excluding LTA-01, LTA-15 and LTA-16)

Hypothetical Receptor	Highest ^a Estimated Excess Lifetime Cancer Risk		Highest ^a Estimated Total Hazard Index	
	Surface Soil	Sub-surface Soil	Surface Soil	Sub-surface Soil
Industrial/Commercial Worker	6.4×10^{-6}	2.2×10^{-6}	9.4×10^{-3}	9.0×10^{-3}
Construction Worker	3.5×10^{-6}	3.6×10^{-7}	6.6×10^{-2}	7.5×10^{-2}
Reservist	1.4×10^{-7}	1.2×10^{-8}	1.7×10^{-4}	1.7×10^{-4}
Adolescent Trespasser	1.2×10^{-6}	7.5×10^{-8}	7.7×10^{-4}	7.3×10^{-4}

^a Highest Estimated Excess Lifetime Cancer Risk (ELCR) and Hazard Index (HI) of the estimates for the three Exposure Units at the site.

The Final Residual HHRA (KEMRON 2008), in conformance to the approved Final HHRA Work Plan and US EPA Risk Assessment Guidance for Superfund (RAGS), demonstrates that the residual risk at the Marion LTA outside of the three work areas involved in the 2007 NTCRA meets the Ohio EPA Technical Decision Compendium risk goal of 1×10^{-5} for excess lifetime cancer risk. Specifically, the final risk estimate for Exposure Unit 3 for exposure of an Industrial/Commercial worker to surface soil is 6.4×10^{-6} . All hazard indices calculations have results below 1.

2.4.3 Human Health Risk for Entire Marion LTA

Receptors at the site are not anticipated to experience an exposure that would result in an unacceptable cancer or non-cancer health risk. The estimated risk values for each assessed portion of the property conforms to the CERCLA acceptable risk range of 1×10^{-4} to 1×10^{-6} and a Hazard Index below 1. Further, the residual risk at the site has been demonstrated to meet the Ohio EPA Technical Compendium Document human health carcinogenic compound risk goal of 1×10^{-5} for all potential future populations, including the US Army Reservist trainee and the potential commercial/industrial user. As demonstrated through the Final Marion LTA Residual HHRA (KEMRON, 2008) and the Final RmACR (KEMRON, 2008) and presented above in this Proposed Plan, no unacceptable risk to human health, as defined by CERCLA and the Marion LTA CERCLA documents, exists at the US Army Reserve Marion Local Training Area in Marion, Ohio.

3.0 Scope and Role of Response Action

Before selecting the preferred final remedial option for the Marion LTA, the Army carefully considered the results of the site investigations including analytical data for the site soil, sediment, surface water and groundwater, confirmatory soil analytical results taken after completion of removals under the TCRAs and the NTCRA, and results of the Final HHRA.

As presented in this Proposed Plan, the Army has demonstrated that the Ohio EPA Technical Compendium goal of 1×10^{-5} is achieved by the RGs under the Reservist exposure scenario for the Removal Action Areas, and has demonstrated that the residual risk at the Marion LTA outside of the Removal Action Areas involved in the 2007 NTCRA meets the Ohio EPA Technical Decision Compendium risk goal of 1×10^{-5} for excess lifetime cancer risk. Specifically, the final risk estimate for Exposure Unit 3 for exposure of an Industrial/Commercial worker to surface soil, as presented in Section 6.0 of the Final Marion LTA Residual HHRA, is 6.4×10^{-6} . All hazard indices calculations have results below 1. The Army has demonstrated that the entire Marion LTA meets the CERCLA risk standard of 1×10^{-4} for carcinogenic compounds and a Hazard Index not exceeding 1, as well as the Ohio EPA human health risk based goal of 1×10^{-5} , for both Reservist and potential industrial/commercial populations. The Army has thus demonstrated that site conditions are protective of the potential exposures based on the future use of the site as a Reservist training facility or a potential future industrial/commercial use.

It is the Army's judgment that no action is required at the Marion LTA to protect public health or welfare and the environment. The response action described in this Proposed Plan for the Marion LTA is No Action/No Further Action, which includes no further environmental investigation or remediation. Because site conditions are protective of human health and the environment, it was not necessary to develop and evaluate remedial action objectives or remedial alternatives beyond the previously developed and implemented removal action alternatives as described in the EE/CA and Action Memorandum.

4.0 Preferred Remedial Alternative Evaluation

4.1 Summary and Evaluation of Alternatives for Marion LTA

In this section, the alternatives of No Action/No Further Action are discussed and evaluated with regard to overall effectiveness, implementability, and costs. In conformance to US EPA guidance, alternatives are analyzed for their effectiveness, implementability and cost. An effectiveness evaluation for each alternative considers protectiveness and the ability of the alternative to achieve applicable or relevant and appropriate requirements (ARARs). With regard to protectiveness, protection of the public health and the community, workers involved in implementation of the alternative, and the protection of the environment all are considered. When evaluating implementability of an alternative, the technical feasibility of the alternative, availability of the necessary resources to support the alternative and the administrative feasibility all are considered. The balancing criteria of State acceptance and community acceptance also are evaluated.

For implementation of the No Further Action alternative following implementation of the NTCRA, all of the evaluation criteria were provided in the Final EE/CA (KEMRON 2007), which the balancing criteria were evaluated through receipt of Ohio EPA's comments and comments submitted by the public during the public comment period conducted from November 28 through December 29, 2006.

For implementation of the No Action alternative for the remainder of the Marion LTA, public comment is invited on this Proposed Plan. CERCLA balancing criteria will be evaluated following receipt of Ohio EPA's comments and comments submitted by the public during the public comment period.

4.2 Detailed Analysis of Alternatives

Alternatives selected for further analysis are further evaluated against nine established CERCLA criteria, consisting of two threshold criteria which relate directly to statutory findings presented within the Record of Decision (or Decision Document), and, seven balancing criteria which represent the primary criteria for alternative comparison. The nine assessment criteria are briefly described further as follows:

Overall protection of human health and environment:

One of two threshold criteria used to assess whether an alternative is able to achieve and maintain protection of human health and environment.

Compliance with applicable or relevant and appropriate requirements (ARARs):

The other of two threshold criteria used to assess how an alternative complies with ARARs that are in place for the contaminants of concern.

Long-term effectiveness and permanence:

One of seven balancing criteria, used to evaluate the long-term effectiveness of an alternative in maintaining protection of human health and the environment after response objectives have been met.

Reduction of toxicity, mobility, or volume through treatment:

This criterion evaluates the anticipated performance of the alternative in achieving a reduction of toxicity, mobility, or volume of contaminated media once treatment is initiated.

Short-term effectiveness:

This criterion evaluates the effectiveness of alternatives in achieving protection during remedy construction and implementation.

Implementability:

This criterion provides an evaluation of the technical and administrative feasibility of an implemented alternative.

Cost:

This criterion provides an evaluation of capital and operation and maintenance (O&M) costs for implementation of a selected alternative.

State acceptance:

This criterion presents an assessment of the degree of acceptance that the regulatory agency may have toward an alternative based on technical and administrative issues.

Community acceptance:

This criterion evaluates potential issues and concerns that the public/community may have respective to each alternative.

The detailed analysis is intended to provide decision makers with sufficient information to adequately compare alternatives, select an appropriate remedy for the site, and demonstrate satisfaction of remedy selection requirements in the eventual Decision Document.

No Action/No Further Action Alternative (Preferred Alternative)

The No Further Action alternative provides for no further activity as the remedial measure implemented within the Removal Action Areas of the Marion LTA. This alternative assumes that no additional evaluation of site conditions will be required, because no changes to site conditions (such as future use for residential property) will occur. No Further Action alternative serves as a baseline scenario for comparative purposes with other prospective alternatives. Similarly, the No Action Alternative pertains to the remainder of the Marion LTA outside of the NTCRA work areas. Under the no action alternative, no monitoring, evaluations or remedial measures will be required on the remainder of the Marion LTA.

Respective to the nine CERCLA assessment criteria, the No Action/No Further Action alternative follows implementation of the NTCRA which has been demonstrated by referenced assessments, and the residual site HHRA, as well as sampling and laboratory analytical results to thoroughly provide protection of human health and the environment as residual levels of contaminants of concern at the Marion LTA exceed neither the NCP 1×10^{-4} point of departure for risk, nor the Ohio EPA risk point of departure of 1×10^{-5} . This alternative provides for protection of human health and the environment as targeted source/waste materials exceeding RmGs have been removed from the site to achieve the applicable future property use removal action standards, thus mitigating unacceptable risks formerly posed by site contaminant source materials and contaminated soils. Because of the demonstration that RmGs have been achieved in the NTCRA work areas, and the Marion LTA Residual HHRA demonstrates no unacceptable risk for the remainder of the site, this alternative is currently and will continue to be protective of human health and the environment site wide.

The No Action/ No Further Action alternative offers no additional measures for compliance with applicable or relevant and appropriate requirements (ARARs). However, the ARARs applicable to this site and Proposed Plan are presented in the EE/CA and with satisfactory completion of the NTCRA, ARARs have been achieved. Similarly, as presented in the HHRA, contaminants remaining onsite are within acceptable regulatory and risk based limits established by the CERCLA standard as well as Ohio EPA's requirements.

Respective to long-term effectiveness and permanence, the No Action/No Further Action alternative is assumed to present acceptable risk to the environment because groundwater sampling and site soil analytical data demonstrate that levels of contaminants are within acceptable regulatory ranges. The SLERA demonstrated no impacts to ecologically significant resources. Remaining COCs have been demonstrated via human health risk assessment to be within acceptable limits and pose no unacceptable risk such that no unacceptable risk of contaminant migration or future impacts are considered likely. This alternative is anticipated to provide long-term effectiveness and permanence, as source materials and contaminated soil that exceeded the RmGs for the NTCRA have been permanently removed from the site and remaining soil COC concentrations are below NCP and Ohio EPA accepted risk goals, thus mitigating unacceptable risk potentially posed by contact with the materials.

Respective to reduction of toxicity, mobility, or volume through treatment, the toxicity and volume of waste would be reduced through this alternative, as stabilization treatment was conducted for soils that contained lead concentrations in excess of Resource Conservation and Recovery Act (RCRA) regulatory standards during the NTCRA. The mobility of the contaminants of concern have been reduced through the removal to levels below RGs within the NTCRA work areas, and off-site disposal has been conducted at an appropriately licensed facility that has been determined to meet siting criteria such that migration of contaminants will not occur. The volume and toxicity of waste and contaminated soil at the site has been reduced, as waste and contaminated soil that resulted in unacceptable risk has been removed from the Marion LTA and stabilized or disposed of appropriately.

Respective to short-term effectiveness, implementation of this alternative required control measures in the field during implementation of the NTCRA to limit fugitive dust emissions, and erosion and sediment runoff controls. Control measures were developed to address potential impacts to both on-site workers and the local community. Off-site transport of excavated wastes required standard vehicle cleaning/decontamination and covered transport containers. On-site worker protection measures were implemented where necessary to control exposure/contact with waste materials, impacted soils, and dust. All measures were implemented under approval and scrutiny of the Ohio EPA. Based upon the successful completion of the NTCRA to NCP and Ohio EPA human health risk-based removal action goals, No Further Action will be necessary. No Action will be necessary for the remainder of the Marion LTA.

There is no evaluation of implementability or cost associated with the No Action/ No Further Action alternative as no active form of remediation, additional evaluations or continued monitoring are considered part of this alternative. However, implementation costs for the NTCRA as detailed in the EE/CA Appendix B, were \$2,158,825.00.

The NFA portion of the No Action/ No Further Action alternative will be evaluated for State acceptance and Community acceptance following completion of the public comment period for this Proposed Plan. It is of note that Ohio EPA's and the public's comments supported the NTCRA which was implemented in conformance with the EE/CA, RmAWP and Action Memorandum. Ohio EPA stated in its comments on the EE/CA that Alternative 4 (excavation with off-site disposal) was the best removal alternative for the three areas that were subject to the NTCRA. Two community commenters indicated a preference for active cleanup in their comments on the EE/CA. Now that the NTCRA has been successfully completed, No Further Action remains based on successful achievement of the site RGs. The HHRA has demonstrated that the portions of the site beyond the NTCRA work areas is safe for the future intended property use. The risk assessment was completed using technical methods based on USEPA guidance, as detailed in a work plan. Ohio EPA agreed with the technical approach detailed in that work plan. The State and Community acceptance CERCLA criterion will be fully evaluated by the Army following receipt of comments from the Ohio EPA and the public submitted during the public comment period.

The Preferred Alternative (As Proposed)

It is the Army's current judgment that no action is required at the Marion LTA to protect public health or welfare and the environment. The Proposed Plan for the Marion LTA is No Action/No Further Action, which includes no further environmental investigation, monitoring or remediation. Because site conditions are protective of human health and the environment, it was not necessary to develop and evaluate remedial action objectives or remedial alternatives beyond the previously developed and implemented removal action alternatives as described in the EE/CA and Action Memorandum, or the HHRA for the remainder of the Marion LTA.

This alternative is based on current and reasonably foreseeable future land use for the Marion LTA, which has been identified by the USAEC and the 88th RRC as Reservist training. Additionally, the site has been demonstrated to meet acceptable industrial/commercial human health risk-based criteria. Therefore, the U.S. Army will establish land use controls for the Marion LTA, as necessary, to ensure that the Marion LTA will not be used for purposes other than industrial/commercial (i.e., residential and recreational use will be prohibited). Because this remedy does not result in remediation of hazardous substances, pollutants, or contaminants on-site such that the property is available for unlimited or unrestricted use, the remedy will be evaluated through the conduct of a CERCLA five-year review, in accordance with applicable USEPA guidelines.

As implemented, the Preferred Alternative satisfies the CERCLA evaluation criteria in that it is protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions to the maximum extent practicable. The remedy also satisfies the statutory preference for treatment as a principal element of the remedy by reducing the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element through treatment.

A final determination of the state and community acceptance will be made following the close of the public comment period for this Proposed Plan.

4.3 Estimated Costs

Estimated costs for implementation of the completed NTCRA, which is a partial basis for the No Action/No Further Action Alternative, are shown in Appendix B of the approved EE/CA as \$2,158,825.00.

5.0 Proposed Schedule

The Preferred Alternative will be implemented following completion of the public comment period for this Proposed Plan, evaluation of Community and State acceptance of the proposed alternative, and issuance of a Decision Document by USAEC and the 88th RRC. All applicable site-related information will be available in the Information Repository and Administrative Record file for the Marion LTA. It is anticipated that a Decision Document will be issued by May 2008.

Public Involvement Opportunities

The USAEC and 88th RRC encourage the public to comment on this proposed plan. **A 30-day public comment period will be held from March 18, 2008 through April 16, 2008.**

During this time, comments on the Proposed Plan will be accepted. You may e-mail, or mail written comments to Mr. Richard Mendoza, USAEC Environmental Restoration Manager, 1 Rock Island Arsenal, Bldg 90, 3rd Fl, Room 30A, Attn: IMAE-CDN (Mr. Richard Mendoza), Rock Island, IL 61299; Email: richard.r.mendoza@us.army.mil. **Comments must be postmarked no later than April 16, 2008.**

After all public comments have been reviewed, the USAEC and 88th RRC, in consultation with Ohio EPA, will make a final decision on the remedy for the site that will protect human health and the environment. The preferred alternative could change based on public input. This final decision will be announced in the Decision Document, which will include the USAEC's and 88th RRC's responses to comments from the public.

How to Obtain Additional Information

Anyone interested in learning more about environmental cleanup or community involvement for the Marion LTA is encouraged to contact the USAEC Environmental Restoration Manager, Mr. Richard Mendoza, or review documents in the information repository at the Marion Public Library. Contact information for Mr. Mendoza and the Marion Public Library are provided below.

USAEC Inquiries

For additional information, please contact:

Mr. Richard Mendoza, USAEC Environmental Restoration Manager
1 Rock Island Arsenal
Bldg 60, 3rd Fl, NW Wing
Attn: IMAE-CDN (Mr. Richard Mendoza)
Rock Island, IL 61299
Phone: (309) 782-1871
Email: richard.r.mendoza@us.army.mil

INFORMATION REPOSITORY

Marion Public Library
445 E. Church Street
Marion, Ohio 43302
Phone: (740) 387-0992
<http://www.marion.lib.oh.us/>

Hours of Operation:

Monday through Thursday	9:00 a.m. to 9:00 p.m.
Friday and Saturday	9:00 a.m. to 5:30 p.m.
Sundays	Closed

6.0 References

ASTM (American Society for Testing and Materials), *Standard Guide for Developing Conceptual Site Models for Contaminated Sites*, E1689-95, ASTM Philadelphia, PA., 1995

BHE Environmental for USACE, Kansas City District. *Wetland Delineation for Local Training Area, Marion Engineer Depot East 88th Regional Readiness Command, Marion County, Ohio*. March 2006.

BHE Environmental for USACE, Kansas City District. *Final Mist Net Surveys for Local Training Area, Marion Engineering Depot East 88th Regional Readiness Command, Marion County, Ohio*. September 2006.

JAYCOR Environmental, *Environmental Baseline Survey (EBS) Marion Outdoor Training Area (OTA), Marion, OH*. August 1996.

Jones Technologies Incorporated (JTI) *Marion LTA Drum Sampling, Marion, OH*. January 1999.

KEMRON Environmental Services, Inc. *USARC GFPR Final Engineering Evaluation and Cost Analysis, Marion, OH*, Revision 2.0 March 19, 2007.

KEMRON Environmental Services, Inc. *Final Sampling and Analysis Plan, Marion, Ohio*, Revision 1.0 May 2005.

KEMRON Environmental Services, Inc. *USARC GFPR Supplemental Site Investigation Report, U.S. Army Reserve Local Training Area, Marion, Ohio, Contract # W911SO-04-F0017*, May 2006.

KEMRON Environmental Services, Inc. *USARC GFPR Quality Assurance Project Plan, Kings Mills, OH and Marion, OH*, Revision 2.0 July 2005.

KEMRON Environmental Services, Inc. *USARC GFPR Final Scoping Level I Ecological Risk Assessment, Marion, OH*, Revision 1.0, January 2007.

KEMRON Environmental Services, Inc. *USARC GFPR Final Residual Human Health Risk Assessment Work Plan, US Army Reserve, Marion Local Training Area, Marion, OH*, Revision 3.0 May 17, 2007.

KEMRON Environmental Services, Inc. *USARC GFPR Final Action Memorandum, US Army Reserve, Marion Local Training Area, Marion, OH*, Revision 2.0 June 13, 2007.

KEMRON Environmental Services, Inc. *USARC GFPR Final Removal Action Work Plan, US Army Reserve, Marion Local Training Area, Marion, OH*, Revision 2.0 July 12, 2007.

KEMRON Environmental Services, Inc. *USARC GFPR Final Removal Action Completion Report, US Army Reserve, Marion Local Training Area, Marion, OH*, Revision 2.0, February 15, 2008.

KEMRON Environmental Services, Inc. *USARC GFPR Final Residual Human Health Risk Assessment, US Army Reserve, Marion Local Training Area, Marion, OH*, Revision 2.0, February 27, 2008.

Montgomery Watson Harza, *Relative Risk Site Evaluation, U.S. Army Reserve Property, Former Marion Engineering Depot, Marion, OH*. November 1998.

Montgomery Watson Harza, 1999a. *Preliminary Investigation Data Package, Former Scioto Ordnance Plant Investigation, Marion, Ohio*.

Montgomery Watson Harza, 1999b. *United States Army Reserve Drum Removal Project, Marion, Ohio*.

Montgomery Watson Harza, 2002. *River Valley School, Operation Unit 1-Former Disposal Area, Remedial Investigation Report. Marion, Ohio*.

Montgomery Watson Harza, *Screening Level Human Health Risk Assessment, U.S. Army Reserve Property, Marion, Ohio*. February 2004.

Montgomery Watson Harza, *U.S. Army Reserve Property, Marion, OH, Time Critical Drum Removal Action Final Report*. July 1999.

Montgomery Watson Harza. *Technical Memorandum – Development of Background Levels in Soil and Groundwater – Operable Unit 1 Remedial Investigation, River Valley School, Former Marion Engineer Depot, Marion, Ohio*,

MWH Americas, Inc. 2004. *Screening Level Human Health Risk Assessment Report. Marion Local Training Area, Marion, Ohio*.

Ohio EPA, *Technical Guidance Manual for Hydrogeologic Investigations and Groundwater Monitoring*. February 1995.

Ohio EPA, *Division of Emergency and Remedial Response, Technical Decision Compendium: Human Health Cumulative Carcinogenic Risk and Non-carcinogenic Hazard Goals for DERR Remedial Response and Office of Federal Facilities Oversight*. April 2004.

Ohio EPA, 2004. *Use of U.S. EPA Region 9 PRGs as Screening Values in Human Health Risk Assessments*. Ohio EPA Division of Emergency and Remedial Response. Technical Decision Compendium. April 28, 2004.

SAIC for USACE Louisville District and 88th Regional Support Command and USARC Headquarters. *Preliminary Assessment Report Marion Local Training Area Marion, Ohio*. October 2000.

Science Applications International Corporation, *Preliminary Assessment Report – Marion Local Training Area, Marion, OH*. October 2000.

SAIC for USACE Louisville District and 88th Regional Support Command and USARC Headquarters. *Draft Site Inspection Geophysical Investigation Report Marion Local Training Area Marion, Ohio*. August 2001.

Science Applications International Corporation, *Draft Site Inspection Report, Marion Local Training Area, Marion, Ohio*. May 2001.

Science Applications International Corporation, *Final Site Inspection Report, Marion Local Training Area, Marion, Ohio*. May 2004.

USACE (prepared for) *Environmental Baseline Survey (EBS) Marion Outdoor Training Area (OTA) Marion, Ohio*. August 1996.

US Army Corps of Engineers *Jurisdictional determination letter*, August 29, 2006.

US Environmental Protection Agency, *Superfund Removal Procedures, Action Memorandum Guidance*. EPA 540/p.90/004, OSWER Directive 9360.3-01, 12-1990

US Environmental Protection Agency, *Quality Assurance/Quality Control Guidance for Remedial Activities: Sampling QA/QC Plan and Data Validation Procedures*. EPA 540/G-90-004, 1990.

US Environmental Protection Agency, RCRA Groundwater Monitoring: Draft Technical Guidance. EPA 530-R-93-001. United States Environmental Protection Agency, November 1992.

US Environmental Protection Agency, *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA*. EPA540-R-93-057, 1993.

US Environmental Protection Agency, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846*, Third Edition, November 1986; Revision 1, July 1992; Revision 2, November 1992; Update II, September 1994; Update III, December 1996.

US Environmental Protection Agency, *Data Quality Objectives Process for Hazardous Waste Site Investigations*, EPA/600-R-00-007, 2000.

US Environmental Protection Agency, *Use of Non-Time Critical Removal Authority in Superfund Response Actions*. (Luftig, Steve, Breen, Barry, February 14, 2000 Memorandum to staff, 7 pages).

US Geological Survey, *Marion East Quadrangle, Ohio, 7.5 Minute Series Topographic Map*. 1982.

USEPA, 1991c. *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual Supplemental Guidance. Standard Default Exposure Factors*. OSWER Directive 9285.6-03. March 25, 1991.

USEPA, 1993. *Superfund Standard Default Exposure Factors for the Central Tendency and RME*. November, 1993.

USEPA, 1996. *Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil*. EPA-540-R-03-001.

USEPA, 1997a. *Exposure Factors Handbook Volume I-III*. Office of Research and Development, Washington, D.C. EPA/600/P-95/002Fa, Fb and Fc, August 1997.

USEPA, 1989a. *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part A)*, EPA/540/1-89/002.

USEPA, 1989b. *Methods for Evaluating the Attainment of Cleanup Standards, Volume I: Soils and Solid Media*. EPA 230/02-89-042. Office of Planning, Policy and Evaluation.

USEPA, 1991a. *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part A), Supplemental Guidance, Standard Default Exposure Factors*, Office of Emergency and Remedial Response, Washington, D.C.

USEPA, 1991b. *Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation Manual, (Part B, Development of Risk-Based Preliminary Remediation Goals)*.

USEPA, 1992a. *Guidance for Data Usability in Risk Assessment*. EPA/540/G-90/008. Office of Emergency and Remedial Response.

USEPA, 1992b. *Supplemental Guidance to RAGS: Calculating the Concentration Term*. OSWER 9285.6-10.

USEPA, 1995. *Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health and Risk Assessment (Interim Guidance)*. Waste Management Division, Office of Health Assessment.

USEPA, 1996. *Soil Screening Guidance: Technical Background Document*. Office of Solid Waste and Emergency Response. EPA/540/R95/128.

USEPA, 1997a. *Exposure Factors Handbook Volume I – General Factors*. Office of Research and Development, Washington, D.C. EPA/600/P-95/002Fa.

USEPA, 1997b. *Health Effects Assessment Summary Tables. FY 1997 Update*. EPA/540/R-97/036.

USEPA, 1998. *Risk Assessment Guidance for Superfund: Volume I Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments)*. Publication 9285.7-01D.

USEPA, 2000. *Region IX Preliminary Remediation Goals (PRGs)*.

USEPA, 2001. *Risk Assessment Guidance for Superfund: Volume I Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessments)*. EPA/540/R/99/005.

USEPA, 2002. *Calculating Upper Confidence Limits (UCL) for Exposure Point Concentrations at Hazardous Waste Sites*. Office of Emergency and Remedial Response. OSWER 9285.6-10.

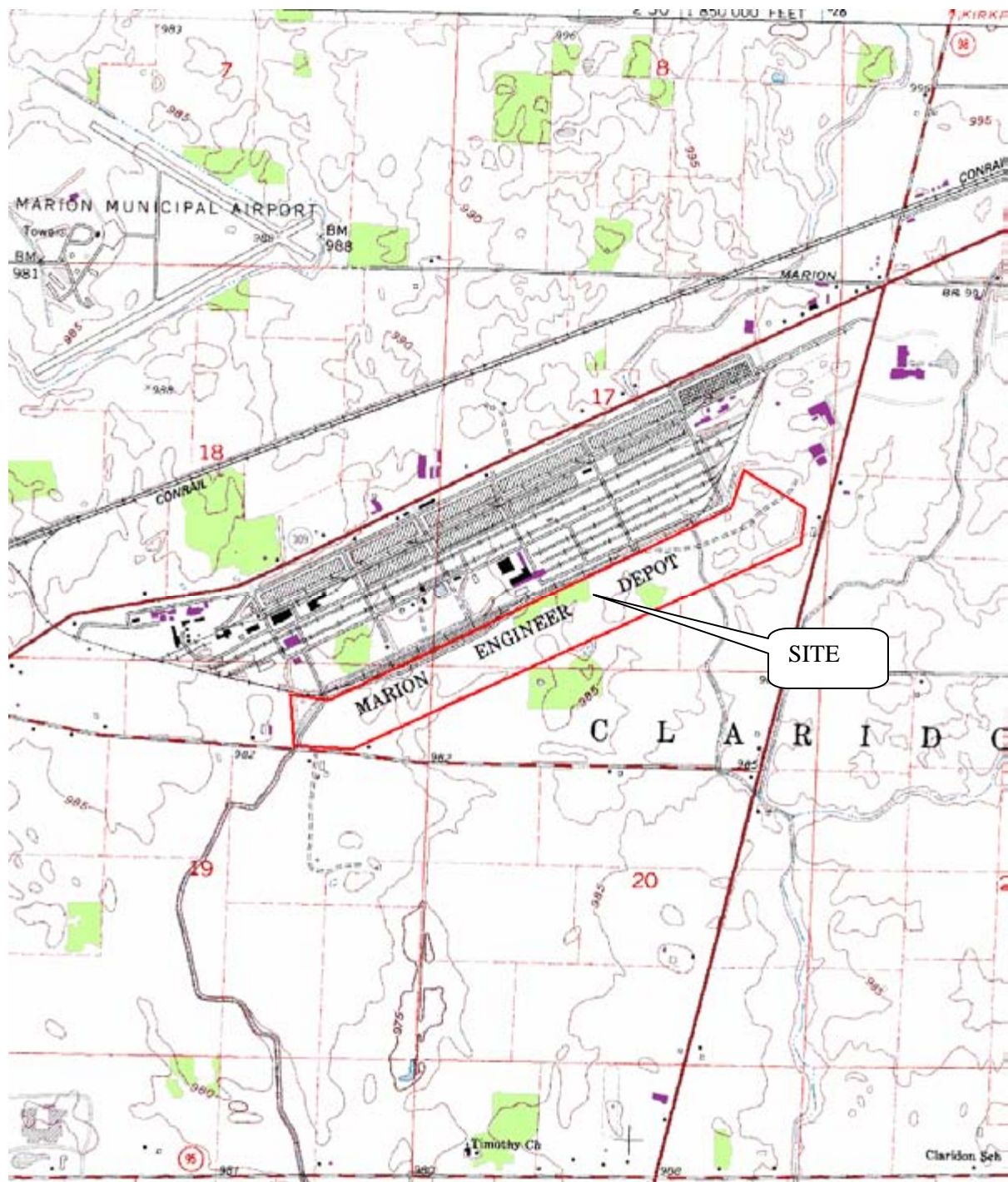
USEPA, 2003a. *Human Health Toxicity Values in Superfund Risk Assessments*. Memorandum by: Michael B. Cook. Office of Superfund Remediation and Technology Innovation. OSWER 9285.7-53. December 5, 2003.




USEPA, 2003b. *Recommendations for the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil*. EPA-540-R-03-001.

Zacharias, K. 2002. 88th Regional Support Command (RSC), U.S. Army Reserve. Personal communication with Pinaki Banerjee, MWH. October 22, 2002. *As cited in:* MWH Americas, Inc. Baseline Human Health Risk Assessment Work Plan. Marion Local Training Area, Marion, Ohio. February, 2004.

Zacharias, K. 2004. 88th Regional Support Command (RSC), U.S. Army Reserve. Personal communication with Pinaki Banerjee, MWH. February 10, 2004. *As cited in:* MWH Americas, Inc. Baseline Human Health Risk Assessment Work Plan. Marion Local Training Area, Marion, Ohio. February, 2004.

FIGURES



 <p>OHIO</p> <p>QUADRANGLE LOCATION</p>	 <p>NORTH</p> <p>MARION EAST, OH QUADRANGLE 1:24,000</p> <p>SCALE 1" = 2000'</p>	<p>FIGURE 1 SITE LOCATION MAP MARION LTA USARC SITE 1565 HARDING HIGHWAY EAST MARION, OH</p>	
		<p>PROJECT NUMBER:</p>	<p>U0005-AJ-001</p>
		<p>PREPARED BY:</p>	<p>DAVE PITZER</p>
		<p>REVIEWED BY:</p>	<p>CHARLIE MARTIN</p>
		<p>DATE:</p>	<p>11/07/07</p>

